



- (51) International Patent Classification:
A47L 23/26 (2006.01)
- (21) International Application Number:
PCT/IB2016/000718
- (22) International Filing Date:
26 May 2016 (26.05.2016)
- (25) Filing Language:
Italian
- (26) Publication Language:
English
- (30) Priority Data:
102015000018063 26 May 2015 (26.05.2015) IT
- (72) Inventor; and
(71) Applicant : LATTERI, Alessandra [IT/IT]; Via Cesare Vivante, 3, 95123 Catania (IT).
- (74) Agent: SAPORITI, Emilio, Luigi; Dott. Franco Cicogna & C. Srl, Via Visconti di Modrone, 14/A, 20122 Milano (IT).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: DOORMAT WITH DECONTAMINATING DEVICE

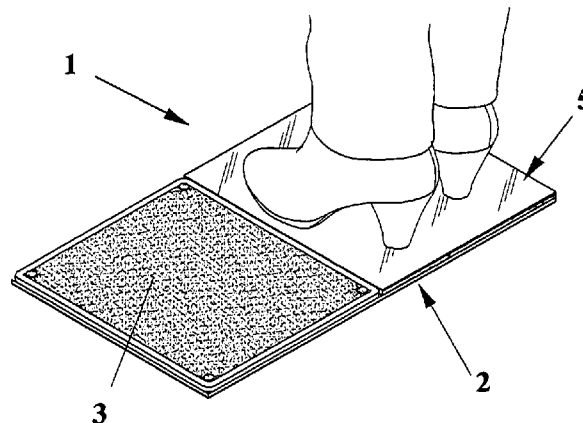


FIG. 7

(57) Abstract: A doormat with a decontaminating device comprises a base on which is applied a cleaning portion, including cleaning bristles or other like structure, and occupying a portion of the base, while leaving free a support zone adapted to receive a decontaminating device constituted by a block of sheet elements overlapping on one another, each sheet element being tearable away.

WO 2016/189380 A1

DOORMAT WITH DECONTAMINATING DEVICE

BACKGROUND OF THE INVENTION

5 The present invention relates to a doormat including a device for decontaminating shoe soles.

 As is known, shoe soles are easily contaminated by microorganisms of different genera, present on any surface, both in outdoor environments and in indoor environments.

10 The most common case of a contamination is obviously that occurring on a road, this contamination being easily transferred in both domestic and public residing environments.

 Common doormats are designed for eliminating coarse dirt, but are not able to eliminate a bacterial load collected by a shoe outsole or sole.

15 Document WO 2005/084519 A1 substantially discloses the preamble of claim 1.

SUMMARY OF THE INVENTION

20 The aim of the present invention is to provide a doormat including a decontaminating device adapted to eliminate or substantially reduce the contamination on shoe soles.

 Within the scope of the above mentioned aim, a main object of the invention is to provide such a doormat which may be easily used by any user.

25 Another object of the present invention is to provide a versatile doormat which may be used both in domestic and public environments.

 Yet another object of the present invention is to provide such a doormat which, owing to its specifically designed making characteristics, is very reliable and safe in operation.

30 The above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a doormat including a decontaminating device according to claim 1.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become more apparent hereinafter from the following disclosure of a preferred, though not
5 exclusive, embodiment of the invention which is illustrated, by way of an indicative but not limitative example, in the accompanying drawings, where:

Figure 1 is a perspective view of the doormat including the decontaminating device, according to the present invention;

10 Figure 2 is a partially exploded perspective view of the doormat shown with the decontaminating device separated from the doormat base;

Figure 3 is a further perspective view, similar to Figure 2, showing a removal step for removing the last sheet arranged on a bottom portion of the decontaminating device;

15 Figure 4 shows a step of applying the decontaminating device to the base support zone;

Figure 5 shows a removal step of removing a top protective sheet;

Figure 6 shows a use of the doormat for cleaning shoe outsoles or soles;

Figure 7 shows a use of the subject doormat for decontaminating shoe
20 soles on an active sheet of the decontaminating device;

20 Figure 8 shows a removal step of removing the used sheet;

Figure 9 shows a further removal step of removing the last sheet arranged at a bottom portion of a new decontaminating device to be applied to the base after having exhausted the first block;

25 Figure 10 shows an application step of applying the new decontaminating device to the base support zone;

Figure 11 shows a further removal step of removing the top protective sheet;

Figure 12 shows yet another removal step of removing a cleaning portion from the base to wash the latter; and

30 Figure 13 shows an applying step of applying the washed cleaning portion to the doormat base.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the number references of the above mentioned figures, the doormat including a decontaminating device according to the present invention, which has been generally indicated by the reference number 1, comprises a base 2 on which a cleaning portion 3 is applied, said cleaning portion including a plurality of bristles or other like elements, occupying a portion of the base 2, while leaving free a support zone 4 adapted to receive a decontaminating device, generally indicated by the reference number 5.

The cleaning portion 3 is advantageously associated with the base 2 by means of snap fasteners 6, or other removable affixing systems as considered suitable.

The base 2 is preferably made of a rubber material, whereas the cleaning portion is advantageously made of a microfiber material, but it may also be made of other materials such as vegetable fibers or other natural or synthetic fibers.

The decontaminating device 5 comprises a block consisting of a plurality of sheet elements 7 overlapped onto one another.

The sheet elements 7 may be for example constituted by a polyethylene film impregnated by bacteriostatic and bactericidal agents.

The block of sheet elements 7 comprises a bottom film 8 and a top protective film 9.

Each said sheet element 7 comprises a sheet edge adapted to facilitate a tearing away and on which may be indicated the number of the sheet itself.

In fact, advantageously, it is provided to number the sheet elements thereby indicating to a user the number of the remaining bactericidal sheet elements which are still available.

The doormat may also comprise decorative elements of any desired type.

The use of the doormat according to the present invention is as follows.

The subject doormat may be arranged at an inlet of the environment to be maintained decontaminated, for example at a home doorway.

Before applying the decontaminating device 5 on the base 2, the last sheet element arranged at the bottom part of the sheet element block constituting the

decontaminating device is removed, as is shown in Figure 3.

Then, the device 5 is applied to the base 2 at the support zone 4, by causing said device to completely adhere to the rubber base itself, as is shown in Figure 4.

5 Before using the doormat, the protective top sheet element is removed, as shown in Figure 5.

A proper use of the subject doormat provides that at first the shoe soles are cleaned on the cleaning portion 3 (Figure 6) and then said soles being decontaminated by causing them to pass on the exposed sheet element of the
10 device 5 (Figure 7).

The decontaminating device 5 comprises a number of adhesive sheets, for example thirty adhesive sheets.

As the exposed sheet element has been exhausted, said sheet element is torn away and disposed of (Figure 8), while leaving exposed the following sheet
15 element which will accordingly be ready to provide the same decontaminating function.

A suitable numbered tongue is provided for facilitating the removal of the used sheet element while allowing to check the number of the decontaminating sheet elements left.

20 After having used all the adhesive sheet elements, the last sheet element is torn away from the support base 2, and a new device 5 is then applied, after removing the last sheet element arranged at the bottom part of the sheet block constituting the device itself, as is shown in Figure 9.

Then, the new device 5 is applied to the base 2 at the support zone 4, by
25 causing said device to fully adhere to the rubber base itself, as shown in Figure 10.

Before using the subject doormat, the protective top sheet element is removed, as shown in Figure 11.

It should be apparent that it is possible to wash the cleaning portion 3 every
30 time it is desired.

To that end, as shown in Figure 13, the cleaning portion 3 is detached from the base 2, owing to the snap fastener elements 6, and is put into a washing

machine. After having been washed, the cleaning portion 3 may be easily and quickly relocated on the base 2, by locking it by means of the snap fastener elements 6.

It should be apparent that it is possible to replace the cleaning portion 3 with a new one when said cleaning portion is worn out.

In a cheaper variation, the doormat according to the present invention may be constituted by an "inlet" bristled doormat portion without the removable cleaning portion 3, that is the bristled portion of the doormat would constitute the starting portion of the doormat on which a user may carry out a starting cleaning of his/her shoe soles by said bristles, whereas the antibacterial sheet block may be a single block of films covering all the remaining width, that is the outlet width of the doormat, or may comprise at least two blocks of partial sheet elements, each being provided for decontaminating the sole of each shoe of the user.

It has been found that the invention fully achieves the intended aim and objects.

In fact, the invention has provided a doormat which may be used as a conventional doormat, but including an efficient decontaminating device providing an optimal antibacterial action.

The doormat including the decontaminating device according to the present invention allows to decontaminate from germs and bacteria any kind of environment, by providing optimal cleaning and hygienic characteristics.

In practicing the invention, the materials used, as well as the contingent size and shapes, can be any, depending on requirements.

CLAIMS

1. A doormat with a decontaminating device (1) comprising a base (2) with a cleaning portion (3) provided with bristles or other like cleaning structure, occupying a portion of the base (2) while leaving free a support zone (4) adapted to receive a decontaminating device (5) constituted by a block of sheet elements (7) overlapped onto one another; each sheet element (7) being tearable away, **characterized in that** each said sheet element (7) comprises a tongue portion adapted to facilitate the tearing away of said sheet element and on which is indicated a progressive number adapted to indicate to a user the number of the bactericidal sheet elements (7) which are still available.

2. A doormat, according to claim 1, **characterized in that** each said sheet element (7) is constituted by a film impregnated by bacteriostatic and bactericidal agents.

3. A doormat, according to claim 1, **characterized in that** said block of sheet elements (7) comprises a bottom film (8) and a top protective film (9).

4. A doormat, according to claim 1, **characterized in that** said cleaning portion (3) is removably associated with said base (2).

5. A doormat, according to claim 1, **characterized in that** said cleaning portion (3) is associated with said base (2) by means of snap fasteners (6).

6. A doormat, according to claim 1, **characterized in that** said base (2) is made of a rubber material.

7. A doormat, according to claim 1, **characterized in that** said cleaning portion (3) is made of a microfiber material.

8. A doormat, according to claim 1, **characterized in that** said doormat comprises decorative elements.

9. A doormat, according to claim 1, **characterized in that** said base constituting said bristle cleaning portion forms an integrating inlet part of said doormat and said sheet element block is a sheet element block covering the whole or a portion of the outlet part of said doormat.

FIG. 1

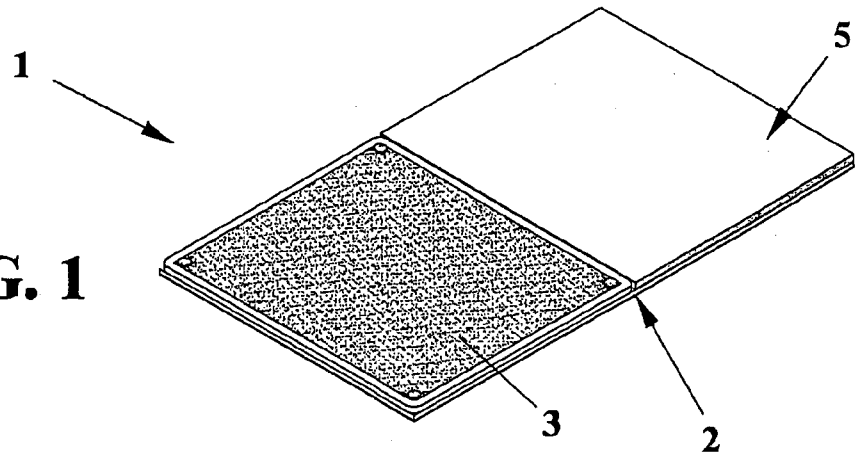


FIG. 2

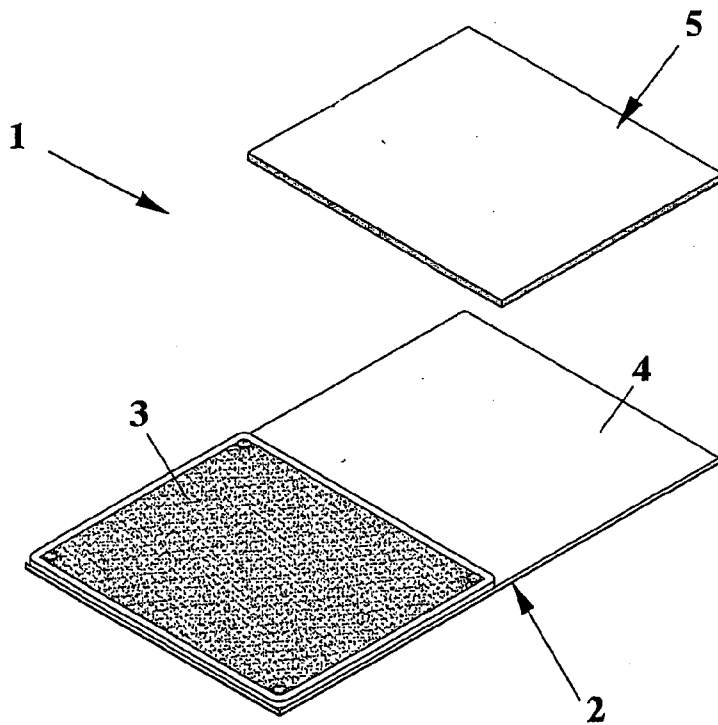
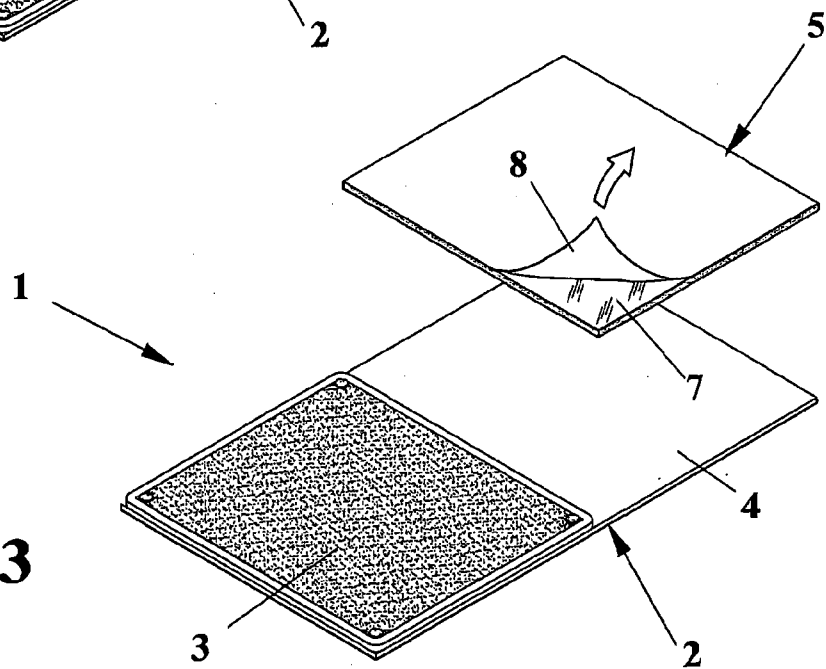


FIG. 3



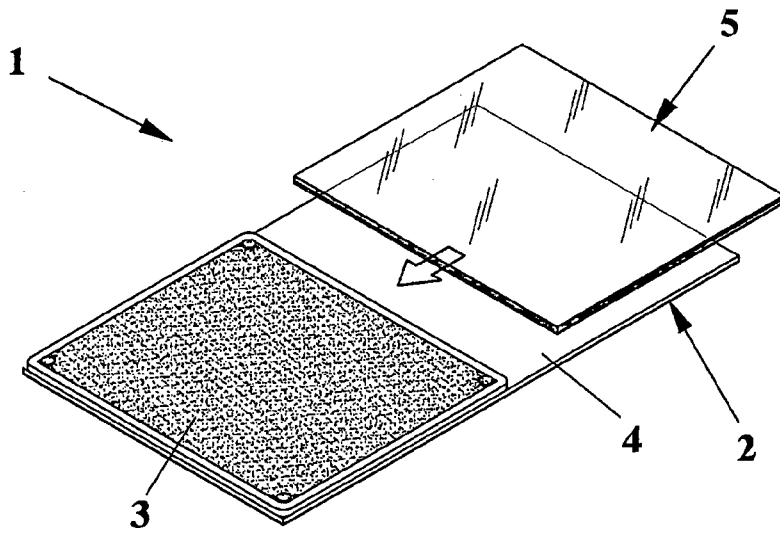


FIG. 4

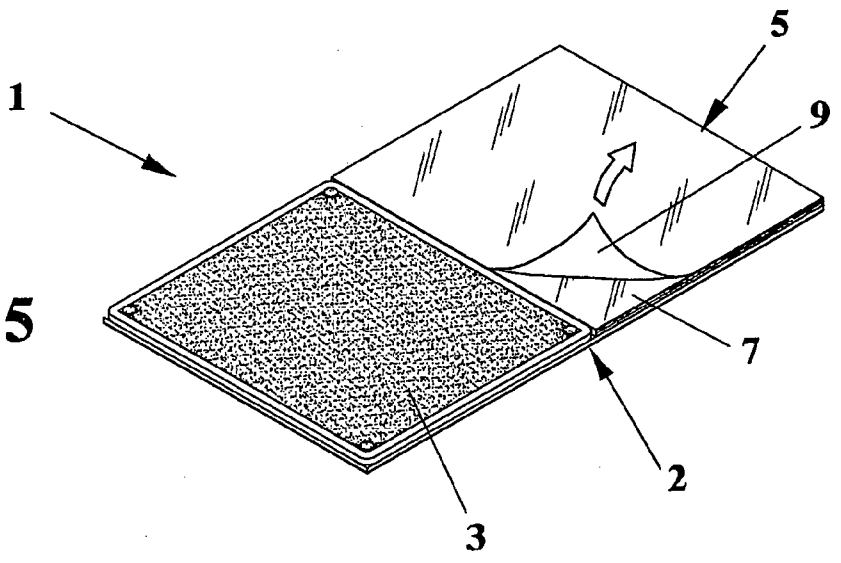


FIG. 5

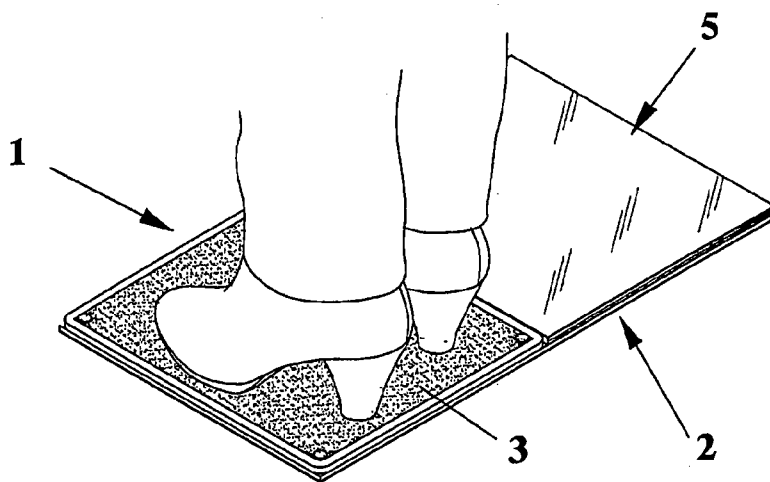


FIG. 6

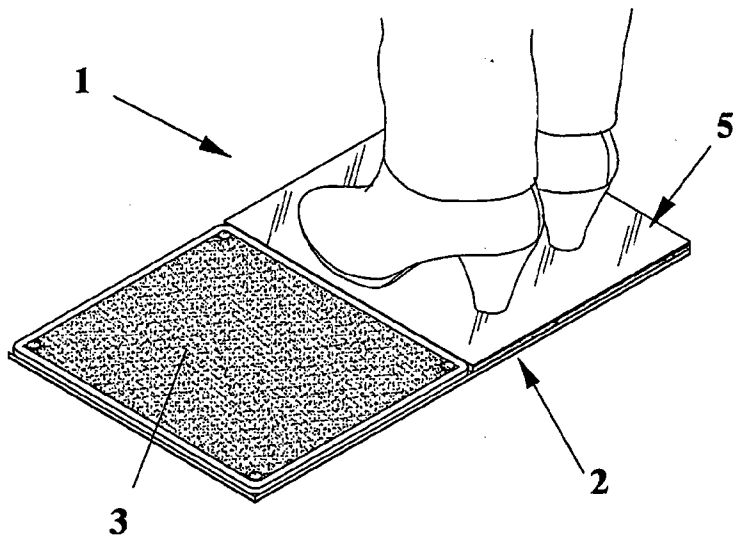


FIG. 7

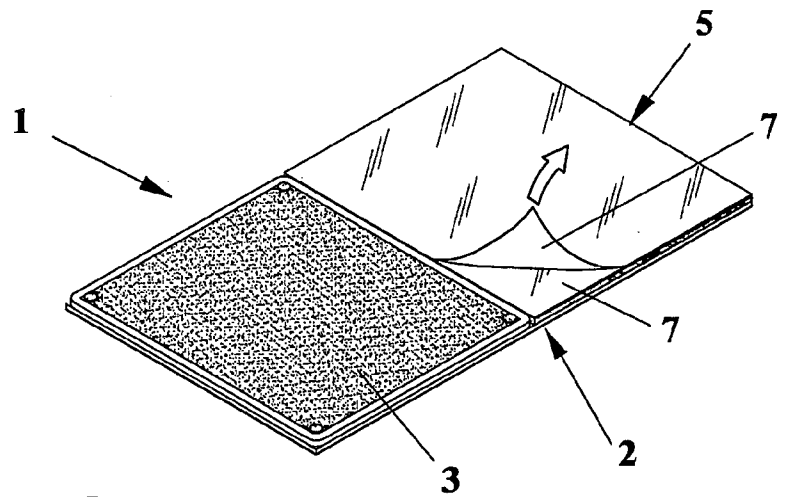


FIG. 8

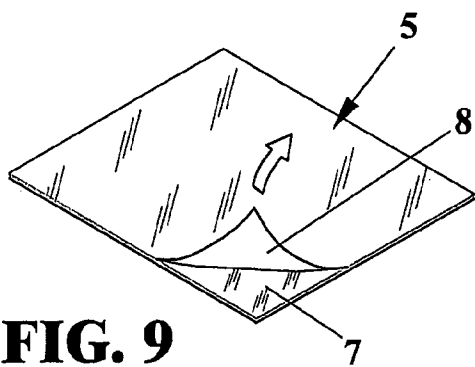


FIG. 9

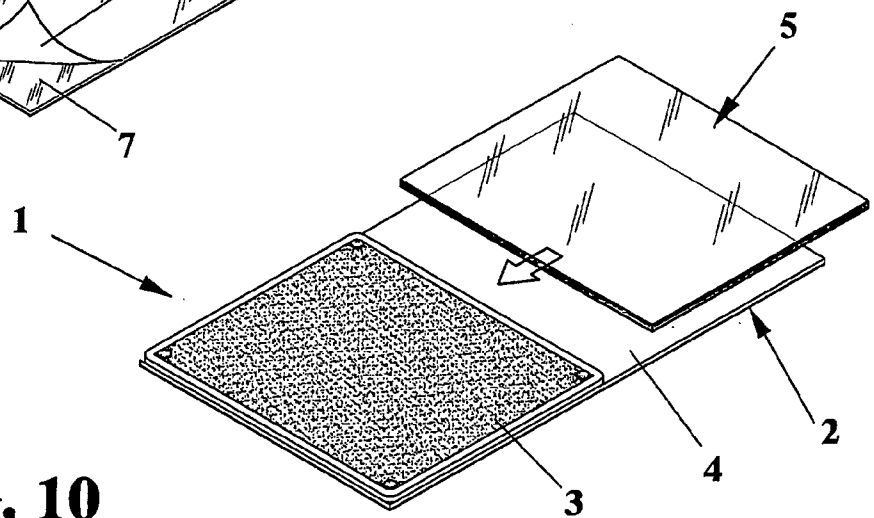


FIG. 10

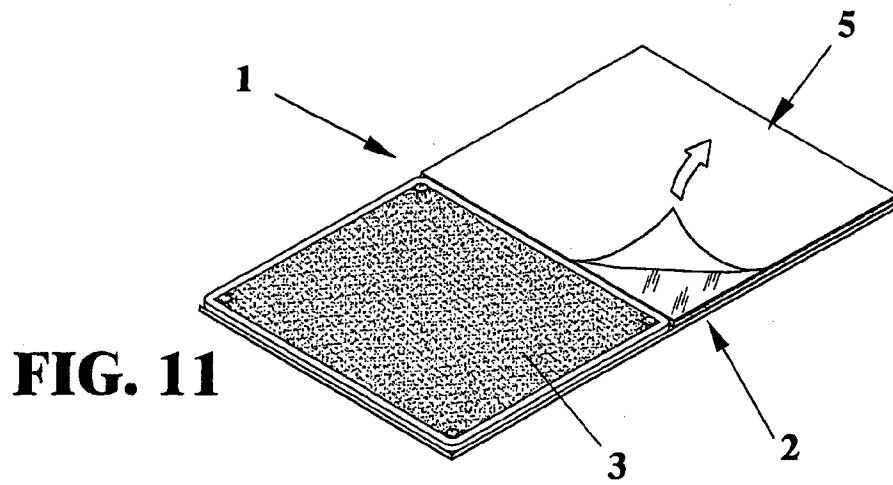


FIG. 11

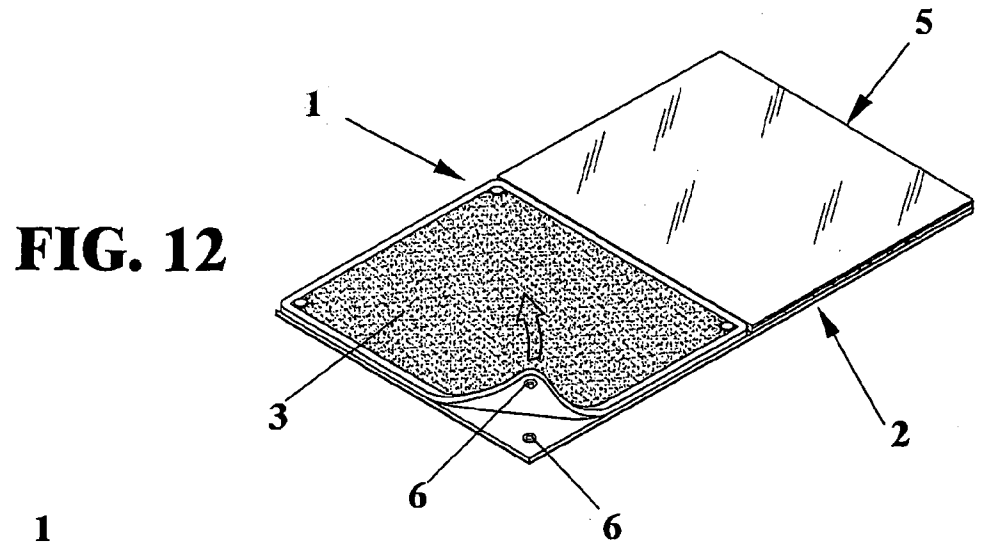


FIG. 12

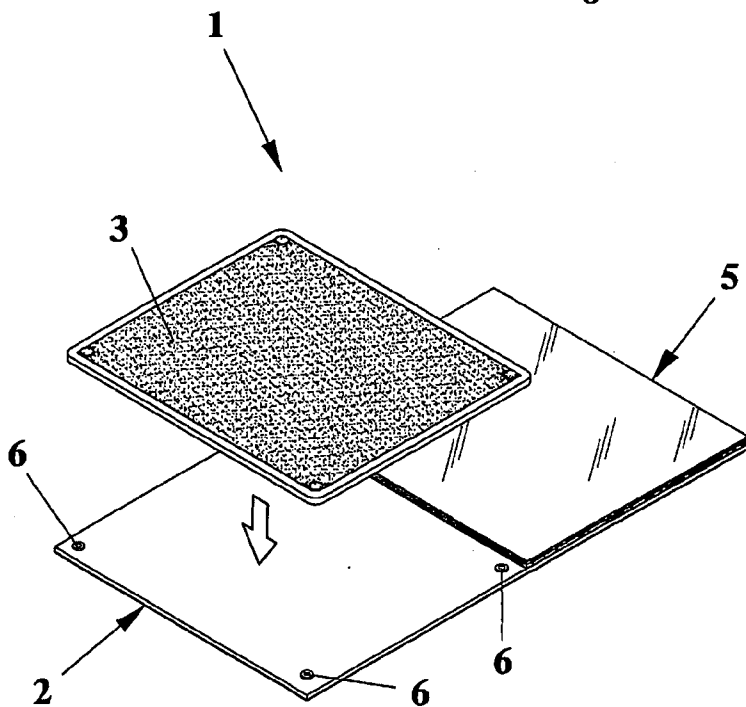


FIG. 13

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2016/000718

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47L23/26
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A47L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	WO 2005/084519 A1 (MAJGAARD INVEST AS [DK]; HEDEGAARD JENS [DK]) 15 September 2005 (2005-09-15) page 2, line 16 - page 7, line 2; figures 1-4	1-3,5-9 4
Y A	-----	
Y A	US 2003/126708 A1 (BLUM RONALD D [US] ET AL) 10 July 2003 (2003-07-10) paragraph [0064]; figure 1	1,2,5, 7-9 4
Y A	-----	
Y A	US 6 458 442 B1 (MCKAY WILLIAM D [US]) 1 October 2002 (2002-10-01) column 3, line 25 - column 4, line 10; figure 2	3 1,2,4-9
Y A	-----	
Y A	EP 1 658 804 A2 (ROBERT ROSS S P A [IT]) 24 May 2006 (2006-05-24) paragraph [0014] - paragraph [0017]; figure 1	6 1-5,7-9

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>
---	---

Date of the actual completion of the international search <p style="text-align: center;">25 July 2016</p>	Date of mailing of the international search report <p style="text-align: center;">02/08/2016</p>
--	---

Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer <p style="text-align: center;">Blumenberg, Claus</p>
--	--

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/IB2016/000718

Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
WO 2005084519	A1	15-09-2005	NONE	

US 2003126708	A1	10-07-2003	NONE	

US 6458442	B1	01-10-2002	NONE	

EP 1658804	A2	24-05-2006	AT 530106 T	15-11-2011
			CA 2527460 A1	22-05-2006
			EP 1658804 A2	24-05-2006
			IT T020040153 U1	22-02-2005
			US 2006107480 A1	25-05-2006
